IN THE SPECIFICATION

Please replace the paragraph starting on page 3, line 19 with the following replacement paragraph:

In one embodiment of the present invention, a method of optical switching using a fiber parametric device receiving an optical pump signal from at least two optical pump sources includes combining a signal from each of the at least two optical pump sources and an input data signal to produce a combined signal, where at least one of the optical signals from the at least two optical pump sources is controllably modulated. The method further includes imparting a third-order non-linear effect on the combined signal such that a multi-band switched optical signal results. The multi-band switched optical signal includes at least one replica of the input data signal and at least three distinct idler bands. As such, the method may further include separating the combined multi-band switched optical signal into at least four bands comprising the replica of the input data signal and the three distinct idler bands.

Please replace the paragraph starting on page 3, line 31 with the following replacement paragraph:

In an alternate embodiment of the present invention an optical switch includes at least two optical pump sources and an optical combiner for combining a signal from each of the optical pump sources and an input data signal to produce a combined signal. The optical switch further includes a non-linear optical element for imparting a third-order non-linear effect on the combined signal and at least one optical splitter for separating the combined signal. In the optical switch of the present invention at least one of the optical pump sources is adapted to be controllably modulated such that when the optical signals are combined a logic sequence of the input data signal is controllably switched.

Please replace the paragraph starting on page 5, line 9 with the following replacement paragraph:

FIG. 1 depicts a high-level block diagram of an embodiment of a two-pump fiber parametric switch (FPS) in accordance with the present invention. The FPS 100 of FIG.

1 comprises two optical pumps 1101 and 1102 (collectively optical pumps 110), a non-linear optical element exhibiting a third-order non-linear susceptibility $\chi^{(3)}$ (illustratively a highly non-linear fiber (HNLF)) 120, five band splitters 130_1-130_5 (collectively band splitters 130), and a pump controller 135. Optionally, the FPS 100 may further include a common amplifier (not shown) or multiple booster amplifiers (not shown) to amplify the power of the optical pumps 110 to a desired level. In addition, the FPS 100 may further comprise a variable electrical delay line to be used for synchronizing an input data signal and a pulsed pump (described in detail below). Furthermore, although the FPS 100 of FIG. 1 is depicted as comprising a single pump controller 135 for both optical pumps 110, in other embodiments an FPS in accordance with the present invention may comprise a separate pump controller for each optical pump therein. In addition, the pump controller(s), although being depicted as being located within the FPS. 100 of FIG. 1, in alternate embodiments of the present invention the pump controller(s) may comprise separate components outside of an FPS of the present invention.

Please replace the paragraph starting on page 5, line 27 with the following replacement paragraph:

In the FPS 100 of FIG. 1, the pump controller 135 controls the output of the optical pumps 110. That is, the optical pumps may be operated at a constant level or may be pulsed (modulated) to perform the switching of an input optical signal in accordance with the present invention (described in detail below). The pump signals from the optical pumps 110 are combined by the band splitter 130_1. The combined pump signals are communicated to the second band splitter 130_2 wherein the combined pump signals are further combined with an input data signal, such as the illustrated WDM signal. The combined pump signals and data signal are communicated to the HNLF 120. In the HNLF 120, the combined signals experience a third-order non-linearity and a parametric amplification which produces a replica of the input data signal and three distinct idler bands. The input data signal and the three idler bands are subsequently separated by the remaining band splitters 130_3-130_5 as depicted in FIG. 1. As such, one or more of the signals at the output band splitters 130_3-130_5 may be selected as the converted/switched output signal.

Please replace the paragraph starting on page 6, line 31 with the following replacement paragraph:

An FPS in accordance with the present invention, such as the FPS 100 of FIG. 1, provides wavelength (frequency) conversion of an input data signal as well as switching capabilities. More specifically, in the FPS 100 of FIG. 1, an input data signal is converted from one wavelength (or frequency) to four distinct wavelengths (or frequencies) via the third-order non-linear effect experienced by the combined optical signals in the HNLF 120 and the parametric gain provided by the two-pump parametric amplification generated within the FPS 100. That is, the use of the two optical pumps 110 in the FPS 100 of FIG. 1 produces three distinct idler bands (i.e., the signal is either mirrored or translated to the corresponding idler band) which are all capable of being switched simultaneously. The time required for outer-to-inner band conversion (e.g., 2+ to 2-) is substantially the same as the duration of the outer-to-outer band conversion (e.g., 2+ to 1-) with dispersion contributing only a small wavelength-dependent latency.